

**BASELINE OBSERVATIONS ON THE COMMON
FUNNEL WEB SPIDER *Hippasa agelinoides* Simon, 1884
(ARANEAE: LYCOSIDAE)**

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Lycosidae or wolf spiders are one of the most diverse family and are free living, litter and ground dwellers found worldwide with 2399 species under 120 genera (World Spider Catalog, 2015). They are so named because of their chasing habit. They are supposed to play an important role in regulating ground dwelling insect pests acting as generalist predators (Senthil Kumar and Regupathy, 2009). Biochemical composition of *H. agelinoides* venom and Haemolymph has been explored in recent studies (Devaraja *et al.*, 2008, 2010a, b; Deepa *et al.*, 2012).

The present observations were undertaken during summer of 2010 in the Jnana Bharathi Campus of Bangalore University, Bengaluru South Taluka, Bengaluru Urban District. The scrub forest ecosystem is home rich diversity of flora and fauna. In this article observations pertaining to body and web morphometry made on the funnel spider *Hippasa agelinoides* (Araneae: Lycosidae) is reported. The webs were epigeal constructed above ground in microhabitats with shade (Figures 1 and 2). Among the ten quadrants (1m X 1m) observed to count the possible number of nests, an average 8.6 webs were found/ quadrant. Random count of funnel webs in three different microhabitats revealed 12 webs under complete shade, four each in open patch and open patch with litter, suiting the 'ground runner' habit of the species. All measurements were made using centimeter thread and centimeter scale and expressed as millimeter (mm) in the text. The Mean \pm SD of the web sheet circumference of 10 funnel webs was found to be 105 ± 51.58 . Ten adults were carefully collected in a plastic jar and transported to laboratory for morphometric measurements. The average live weight (190 mg), length (14 mm) and tip of first appendage to tip of fourth appendage (36 mm) was recorded. The present observations are comparable with Sebastian *et al.*, (2009) who reported the female spider length of 10-12 mm.

The spiders were seen actively capturing different prey entrapped in their web sheet. Funnel webs were found along the roads, walk paths and in amidst dense vegetation. Fires set as part of management measures during summer are bound to cause imbalances in nature and endanger biodiversity by reducing faunal and floral wealth. The fire removes the leaf litter layer and threatens the survival of the ground dwelling spiders (Maxim *et al.* 2008), in the present case *H. agelinoides* (Figure 4). With many studies demonstrating the role of spiders

as generalist predators in different ecosystems including agri-horticulture, focus on their utility needs to be explored in ecological studies devised in future so as to enable reduction in use of pesticides.



Figure 1: *H.agelinoides* at entrance of funnel web



Figure 2: Sheet-like web around the entrance of funnel web

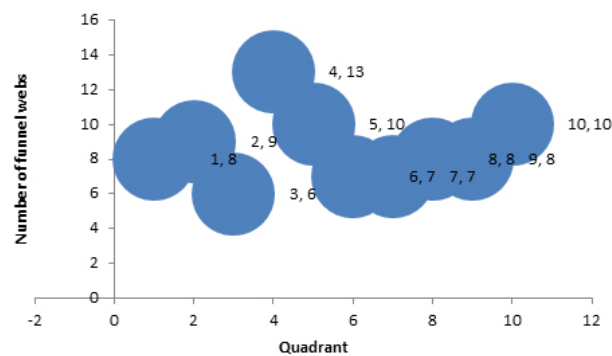


Figure 3: Web count in ten quadrants



Figure 4: Control fires at the study site

REFERENCES

- Deepa B. M., S. Jayaprakash and R. Bhavani. 2012. Comparative analysis of Haemocytin Protein Concentration of the funnel web Spider *Argiope anasuja* and Orb web Spider *Hippasa agelenoides* from Karnataka. *Indian Journal of Fundamental and Applied Life Sciences*, 2 (2): 138 -140
- Devaraja, S., K. S. Girish, V. R. Devaraj and K. Kemparaju. 2010a. Factor Xa-like and fibrinogenolytic activities of a serine protease from *Hippasa agelenoides* spider venom gland extract. *Thrombolysis*, 29, 119–126.
- Devaraja, S., K. S. Girish, Y. J. Gowtham and K. Kemparaju. 2010b. The hagprotease -II is a fibrinogenase from *Hippasa agelenoides* spider venom gland extract: purification, characterization and its role in hemostasis. *Toxicon*, 57, 248–258.
- Devaraja, S., S. Nagaraju, Y. H. Mahadeswaraswamy, K. S. Girish and K. Kemparaju. 2008. A low molecular weight serine protease: purification and characterization from *Hippasa agelenoides* (funnel web) spider venom gland extract. *Toxicon*, 52, 130–138.
- Maxim L., D. Pierre and F. Lenore. 2008. Edge effects created by wildfire and clear-cutting on boreal forest ground-dwelling spiders. *Forest Ecology and Management*, 255: 1434–1445
- Platnick, N. I. 2012. The World spider catalog, version 12.5. American Museum of Natural History. Available from: <http://research.amnh.org/entomology/spiders/catalog/index.html>.
- Sebastian P. A., A.V. Sudhikumar, M. J. Mathew and S. D. Padayatty. 2009. Suborder Araneomorphae. In P.A. Sebastian and K.V. Peter (Eds.) *Spiders of India*. Orient Blackswan, Hyderabad. Pp. 114-500.
- Senthil Kumar, C. M. and A. Regupathy. 2009. Gut content analysis of spiders in coffee ecosystem. *Current Science*, 96: 892–893.